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08/962,362 10/31/97 KAMBE

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MM92/0130

EXAMINER

DAY, M

ART UNIT

PAPER NUMBER

2879

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UNITED STATES DEPARTMENT OF COMMERCE
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 24

Application Number: 08/962,362
Filing Date: October 31, 1997
Appellant(s): Kambe et al.

Peter Dardi, Ph. D.
For Appellant

EXAMINER'S ANSWER

MAILED
JAN 3 5 2001
GROUP 2800

This is in response to appellant's brief on appeal filed 25 October 2000.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that the claims stand or fall together is agreed to by the examiner.

The copy of the appealed claims contained in the Appendix to the brief is correct.

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(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,442,254	Jaskie	8-1995
5,455,489	Bhargava	10-1995

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 4, 5, 6, 20-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskie. Referring to claims 1, 4, and 5, Jaskie discloses a display (see FIG. 5) comprising phosphor particles (fluorescent layer 53) having an average diameter less than 100 nm (see abstract, 10 nm particles) wherein the particle size is selected to yield light in a desirable portion of the spectrum. Jaskie is silent as to the particular range of phosphor particles. Jaskie teaches, however, that the specification of a desired particle range is within the skill of the art. See col. 7, lines 34-40. It would have been obvious to specify a desired particle range because the specification of a desired particle range is generally recognized to be within the skill of the art.

Still referring to claims 1, 4, and 5, substituting an average diameter of 5 nm as recited in claim 4, into the narrower range of particle sizes as recited in claim 5, yields a range of particle sizes of from 3 to 7 nm. Now referring to column 6, lines 46-49, Jaskie teaches that yellow light is produced from particles having a size of approximately 5 nm. Jaskie further teaches that the

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energy of a photon is inversely proportional to wavelength (col. 1, line 52-55), and inversely proportional to the size of the phosphor particle (col. 4, line 40-44). Taking yellow light to be the band from 597 to 577 nm and using the equations provided in column 1, line 52-55, and column 4, line 40-44 yields the yellow phosphor having the size from 5.04 to 4.95 nm, i.e., approximately 5 nm, as disclosed by Jaskie. Similarly, substituting the wavelength range of visible light from 400 to 800 nm, yield a particle distribution of from 4.14 to 5.84 nm, which is within the claimed range from 3 to 7 nm. Consequently, it is the position of the examiner that it would have been obvious to one skilled in the art that the presently claimed range of sizes reads on the teachings of Jaskie.

Referring to claim 6, see col. 8, lines 19-28, FED.

Referring to claims 20, and 21, FED displays conventionally include a plurality of phosphors for generating red, blue, green light (see for example Clerc, FIG. 6, RGB phosphors 28), and anodes 28.

Referring to claims 22, 23, see col. 1, line 26; FIG. 5, faceplate 52.

Claim 24, and 27 are rejected for the same reason as claim 21.

Referring to claim 25, see FIG. 4, focus grid 59.

Claim 28 is rejected for the same reason as claims 20, 21.

Referring to claim 29, see FIG. 2, and col. 6, line 48.

Claim 30 is rejected for the same reason as claim 6.

Claims 2, 3, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskie in view of Bhargava. Referring to claims 2, and 3, the selection of known materials for a known

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purpose is generally considered to be within the skill of the art. Bhargava teaches that ZnO (group II-VI, semiconductor), ZnS, and Y_2O_3 (see col. 2, lines 4-32), are all suitable for quantum contained phosphors, such as desired by Jaskie. It would have been obvious to select ZnO, ZnS, and Y_2O_3 , phosphors as disclosed by Bhargava, in the display, as disclosed by Jaskie, because the selection of known materials for a known purpose is within the skill of the art.

Referring to claim 26, Jaskie does not disclose an EL display. Bhargava teaches that quantum confined phosphors provide EL displays (see FIG. 15) with higher efficiency (see col. 9, lines 46-67). It would have been obvious to include the quantum confined phosphors, as disclosed by Jaskie, in the EL display, as disclosed by Bhargava, for higher efficiency.

(11) Response to Argument

Referring to page 7, the Appellant alleges that "In order to render a claimed apparatus...obvious, the prior art must enable one skilled in the art to make and use the apparatus." The examiner concurs, and respectfully submits that 35 U.S.C. 282 provides U.S. patents with a substantial presumption of validity.

Referring to pages 9, and 10, the Appellant alleges that the declarations by professor Bricker, and Singh provide clear objective evidence that the wet filtration method, as disclosed by the Jaskie patent, does not enable the extremely fine separation needed for quantum contained phosphors, such as desired by Jaskie. The examiner respectfully disagrees. Neither Dr. Rajiv Singh, nor Dr. Bricker present any experimental results. evidence of test conducted, methods

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evaluated, or any factual evidence. Rather, the subject declarations constitute mere arguments, and opinions. It is the position of the examiner that any objective evidence should be supported by actual proof. See MPEP 716.01(c).

Referring to the first full paragraph of page 12, the appellant alleges that size separation of nanoparticles by chromatography is at best speculative. The examiner respectfully disagrees. Again, it is the position of the examiner that there is a substantial presumption of validity for U.S. patents, such as by Jaskie. The fact that the applicant has two experts, in whose opinion, allege that the Jaskie patent is non-enabling, is of little probative value when weighted against the teachings of Jaskie, as disclosed in a valid U.S. patent. Rather, it is the position of the examiner that when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Referring to page 13, the appellant alleges that in the five years since the issuance of the Jaskie patent, there is no public knowledge of successful application of the Jaskie approach and that this provides objective evidence against the Jaskie teaching. The examiner respectfully disagrees. The appellant fails to disclose what data basis, public records, or patent files, if any, that have been searched, and what search terms, logical statements, or search strategy, if any, that was applied. Consequently, it is the position of the examiner that this statement constitutes mere allegation, and does not constitute "objective evidence" as alleged by the appellant.

Referring to page 15, the appellant alleges that Appendix F, product literature from Millipore Corporation, provides evidence that filters are not effective in removing particles having

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a diameter less than a micron. The examiner respectfully disagrees. The fact that the appellant has found a vendor that provides a filter that is not suitable for nanoparticle separation is non-persuasive. The purported evidence has no correlation to the fact the appellant wishes to establish. A 32 ounce cola bottle does not provide evidence of the non-existence of 20 ounce cans. It is noted that in U.S. patent no. 5,460,701 by Parker et al. (of record, see paper 18), in col. 4, lines 54+, Parker et al. disclose the use of a mechanical filter for the collection of nanocrystals. Consequently, it is evident that mechanical filters for nanocrystals are, in fact, available.

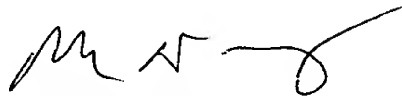
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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'M. Day', with a long horizontal stroke extending to the right.

**MICHAEL DAY
PRIMARY EXAMINER
GROUP 2800**

M.H.D.
January 20, 2001

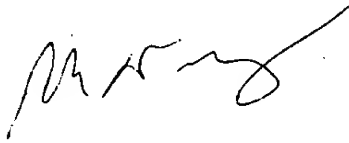
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An appeal conference was held on, or about, 1/20/2001 with Mr. Day, Mr. N. Patel, and
Mr. V. Patel in attendance.

A large, stylized handwritten signature, possibly reading "Mr. Day", is written in black ink.